

M408
Probability
Worksheet 9

Name _____

- 1.) You have 6 chocolate bars, 8 lollipops, and 10 fruit chews. How many ways are there to pick 4 pieces of candy and get at least 2 chocolate bars?

- 2.) How many ways are there to choose a captain, a first mate, a cook, and one deck-swabber from a group of 7 pirates?

- 3.) How many ways are there to arrange 8 beads on a bracelet with a clasp?

- 4.) How many ways are there to make a license plate with a three digit even number (with the first digit not equal to 0) followed by three vowels? You may not repeat digits, but you may repeat letters.

- 5.) Two dice are rolled simultaneously. Find the probability that the sum of the values is 8 or less.

- 6.) Flip a coin three times. What is the probability of getting at least one heads?

- 7.) Your arch-enemy is known to have 6 ninjas, 4 evil robots, 3 vampires, and 2 snipers under his employ. If he sends five of his minions after you, what is the probability that two of them will be ninjas and two of them will be vampires?

8.) You're running late. You reach into your sock drawer, without looking, and grab two socks. If the drawer contains 5 white, 6 black, and 3 brown socks, what is the probability you grabbed two socks of the same color?

9.) Roll a 6-sided die and pick a card from a standard deck. What is the probability that you picked a non-face card and rolled a prime number?

10.) When rolling a 12-sided die (numbered 1 – 12) several times, what is the probability of rolling a prime number 4 times in a row?

11.) It rains 32% of the time, you get a ride to school from a friend 66% of the time, and you have enough money for bus fare 20% of the time. What is the probability that it is raining, your friend does not give you a ride, and you don't have money for the bus?

12.) A card is picked from a standard deck, and a colored ball is picked from a hat at the same time. If the probability of picking a Club AND a yellow ball is $\frac{3}{28}$, what is the probability of picking a yellow ball from the hat?

13.) Find the probability of picking a heart, followed by a club, followed by another heart, from a deck of cards without replacing your picks in the deck.

14.) A red die and a green die are rolled. What is the probability of rolling a sum of 4 or 9?

15.) A red die and a green die are rolled. What is the probability of rolling a total sum that is '7' or having at least one die show a '4'?

16.) Find the probability of picking two cards from a deck that are both face cards or both red.

63% of students have read Twilight. 52% of students have read Harry Potter. 24% of students have read both.

17.) If a student is randomly selected, what is the probability he/she has read Harry Potter or Twilight?

18.) What is the probability a student has read Twilight, but not Harry Potter?

19.) What is the probability a student has read neither Twilight nor Harry Potter?

20.) Seven of the 24 English teachers wear glasses. 11 of the 20 math teachers wear glasses. Find $P(\text{English teacher} \mid \text{no glasses})$.

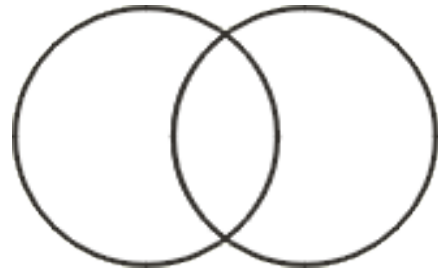
21.) You have a 51% chance of getting accepted to clown college. You have a 33% chance of getting accepted to clown college AND getting the esteemed Bozo Scholarship. What is the probability of getting the Bozo Scholarship, given that you have already been accepted to clown college?

22.) The probability of getting a circus job, given that you flunk out of clown college, is $\frac{3}{10}$. If the probability of getting a circus job AND flunking out of clown college is $\frac{1}{24}$, what is the probability of flunking out of clown college?

23.) Alex is taking two courses, Algebra and U.S. History. Student records indicate that the probability of passing Algebra is 0.35, the probability of failing U.S. History is 0.35, and the probability of passing at least one of the two courses is 0.80. Find the following.

a.) P(pass history)

b.) P(pass both courses)



c.) P(fail both courses)

d.) P(pass exactly one course)

24.) Dr. Hawk has 150 patients in an allergy clinic. 68 patients are allergic to dairy, 93 are allergic to pollen, 91 are allergic to fur, 31 are allergic to all three, 29 are allergic to only pollen, 12 are allergic to only dairy, and 40 are allergic to dairy and pollen.

a.) P(allergic to only animal fur) =



b.) P(not allergic to dairy, pollen, or fur) =